

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1 – 30. (cancel)

31. (previously presented) A light-emitting device comprising:

a compound semiconductor layer having a light-emitting layer portion, being configured so that a first main surface of which serves as a light extraction surface;

wherein the light-emitting layer portion is configured as having a double heterostructure in which a first-conductivity-type cladding layer, an active layer and a second-conductivity-type cladding layer, all of these layers being composed of $(\text{Al}_x\text{Ga}_{1-x})\text{In}_{1-y}\text{P}$ (where, $0 \leq x \leq 1$ and $1 \leq y \leq 1$), are stacked in this order; and

a device substrate bonded on a second main surface side of the compound semiconductor layer while placing a main metal layer in between, the main metal layer having a reflective surface for reflecting light from the light-emitting layer portion back towards the light extraction surface side; further comprising:

a diffusion-blocking layer interposed between the device substrate and the main metal layer, being composed of a conductive material, and provided for blocking diffusion of any device-substrate-derived components towards the main metal layer;

further comprising a substrate-side contact metal layer interposed between the diffusion-blocking layer and the device substrate, intended for reducing contact resistance between the device substrate and the diffusion-blocking layer.

32. (cancel)

33. (original) The light-emitting device as claimed in Claim 31, wherein the main metal layer is composed of an Au-base layer having Au as a major component, at least in a portion including the interface with the diffusion-blocking layer, and the device substrate is a Si substrate.

34. (original) The light-emitting device as claimed in Claim 33, wherein the diffusion-blocking layer is a metal layer for blocking diffusion, having either Ti or Ni as a major component.

35. (original) The light-emitting device as claimed in Claim 34, wherein the metal layer for blocking diffusion has a thickness of 1 nm to 10 μm , both ends inclusive.

36. (original) The light-emitting device as claimed in Claim 33, wherein the device substrate is an n-type Si substrate, and further comprises a substrate-side contact metal layer interposed between the diffusion-blocking layer and the Si substrate, being composed of an AuSb alloy or an AuSn alloy, and being intended for reducing contact

resistance between the Si substrate and the diffusion-blocking layer.

37. (original) The light-emitting device as claimed in Claim 33, wherein the Au-base layer composes the reflective layer.

38. (previously presented) A light-emitting device comprising:

a compound semiconductor layer having a light-emitting layer portion, being configured so that a first main surface of which serves as a light extraction surface;

wherein the light-emitting layer portion is configured as having a double heterostructure in which a first-conductivity-type cladding layer, an active layer and a second-conductivity-type cladding layer, all of these layers being composed of $(\text{Al}_x\text{Ga}_{1-x})_y\text{In}_{1-y}\text{P}$ (where, $0 \leq x \leq 1$ and $1 \leq y \leq 1$), are stacked in this order; and

a device substrate bonded on a second main surface side of the compound semiconductor layer while placing a main metal layer in between, the main metal layer having a reflective surface for reflecting light from the light-emitting layer portion back towards the light extraction surface side; further comprising;

a diffusion-blocking layer interposed between the device substrate and the main metal layer, being composed of a conductive material, and provided for blocking diffusion of any device-substrate-derived components towards the main metal layer; wherein, the main metal layer is composed of an Au-base, composed of pure Au, or an Au alloy having a ratio of Au content ratio of 95% by mass or above, at least in a portion including the interface with the diffusion-blocking layer, and the device substrate

in a Si substrate; and

wherein the Ag-base layer interposed between the Au-base layer and the compound semiconductor layer, and having Ag as a major component, composes the reflective layer.

39 – 80. (cancel)

81. (previously presented) A light-emitting device comprising:

a compound semiconductor layer having a light-emitting layer portion, being configured so that a first main surface of which serves as a light extraction surface;

wherein the light-emitting layer portion is configured as having a double heterostructure in which a first-conductivity-type cladding layer, an active layer and a second-conductivity-type cladding layer, all of these layers being composed of $(\text{Al}_x\text{Ga}_{1-x})\text{In}_{1-y}\text{P}$ (where, $0 \leq x \leq 1$ and $1 \leq y \leq 1$), are stacked in this order;

a Si substrate bonded on a second main surface side of the compound semiconductor layer while placing a metal layer in between;

wherein the bonding surface of the metal layer with the compound semiconductor layer forms a reflective layer, and the metal layer has a Si-diffusion-blocking layer having Au or Ag as a major component and also containing a Si-diffusion-blocking component which comprises a single, or two or more elements selected from Sn, Pb, In and Ga, and being planned for inhibiting Si diffused from the Si substrate from depositing on the reflective surface.

82. (original) The light-emitting device as claimed in Claim 81, wherein the Si-diffusion-blocking layer has a content of the Si-diffusion-blocking component of 1% by mass to 20% by mass, both ends inclusive.

83. (original) The light-emitting device as claimed in Claim 81, further comprising a substrate-side contact alloyed layer interposed between the Si-diffusion-blocking layer and the Si substrate, and being intended for reducing contact resistance between the Si substrate and the Si-diffusion-blocking layer.

84. (original) The light-emitting device as claimed in Claim 81, wherein the metal layer has a main metal layer between the compound semiconductor layer and the Si-diffusion-blocking layer, the main metal layer having a content of the Si-diffusion-blocking component smaller than that of the Si-diffusion-blocking layer.

85. (original) The light-emitting device as claimed in Claim 84, wherein the Si-diffusion blocking layer has a thickness of 50 nm or above and 5 μm or less.

86. (original) The light-emitting device as claimed in Claim 84, wherein the Si-diffusion-blocking layer has Au as a major component; and the main metal layer comprises an Au-base main metal layer which forms the reflective surface and has Au as a major component.

87. (original) The light-emitting device as claimed in Claim 84, wherein
the Si-diffusion-blocking layer has Au as a major component; and
the main metal layer is composed of an Au-base coupling layer having Au as a
major component, in a portion thereof in contact with the Si-diffusion-blocking layer, and
is composed of an Ag-base reflective layer having Ag as a major component or an Al-
base reflective layer having Al as a major component, in a portion thereof composing
the reflective surface.

88. (original) The light-emitting device as claimed in Claim 81, wherein the
reflective surface is configured by the Si-diffusion-blocking layer.

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